

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

INGURAN, LLC, CYTONOME/ST,
LLC, and XY, LLC,

Plaintiffs and Counter Defendants,

OPINION AND ORDER

v.

17-cv-446-wmc

ABS GLOBAL, INC., GENUS PLC, and
PREMIUM GENETICS (UK) LTD,

Defendants and Counter Claimants.

In this patent lawsuit, plaintiffs Inguran, LLC, Cytonome/ST, LLC and XY, LLC, allege the defendants ABS Global, Inc., Genus PLC and Premium Genetics (UK) Ltd, have infringed six patents, two owned by plaintiff XY and four owned by plaintiff Cytonome. In addition, all parties assert claims and counterclaims under state law. Before the court are the parties' fully briefed, cross-motions for summary judgment and claims construction. (Dkt. ##156, 163.) On February 8, 2019, the court also held a hearing on those motions. In this opinion and order, the court concludes that: (1) the asserted claims of the '860 patent are invalid as indefinite; (2) the asserted claims of the '822 patent fail to meet the written description requirement of 35 U.S.C. § 112; and (3) plaintiffs' state law claims are barred by the judgment issued in *ABS I*.

This leaves defendants' motion for summary judgment as to the Cytonome patents (and plaintiffs' cross motion on the Tashiro invalidity counterclaim), as well as plaintiffs' motion for summary judgment on defendants' counterclaims. The court intends to issue a separate opinion shortly that: (1) construes the "direction" terms consistent with the construction offered by defendants; (2) construes the "focusing" terms to include the

prosecution disclaimer; (3) grants summary judgment to defendants on most (but not all) of plaintiffs' theories of infringement based in part on the "direction" construction; and (4) denies summary judgment to defendants on the anticipation counterclaims based on Weigl, Tashiro and Wada. As a result of those anticipated rulings, some patent claims and counterclaims will continue to trial, as well as possibly defendants' counterclaims, which the court still needs to address. The court, however, will strike the April 1, 2019, trial date and all pretrial deadlines for two core reasons.

First, after the February 8th hearing, the court reviewed more closely the IPR proceedings to date on the four Cytonome patents. While PTAB denied review (and denied defendants' petition for rehearing on denial of review) for two of the patents, the other two progressed to a hearing in January, and PTAB should issue an opinion shortly. *See* 37 C.F.R. § 42.100 (requiring that an IPR proceeding from institution is "normally no more than one year," though "can be extended by up to six months for good cause"); IPR2017-02163 (instituted on April 9, 2018); IPR2018-02161 (instituted on April 9, 2018). While neither party has asked for a stay, the court is reluctant to add patents to a jury trial that may be found to be unpatentable within a matter of days or weeks of that trial.

Second, as the court mentioned during the hearing, there are compelling reasons to try this case and retry the remanded patent claims in *ABS I* in one, consolidated trial. Given that defendants have filed a motion for clarification that has stalled the Seventh Circuit's issuing of its mandate and may expand the issues for retrial. Regardless, because some trial preparation and coordination of expert schedules will be required to try the

patent claims in *ABS I*, postponing the trial date in this case will facilitate a consolidated trial.

As mentioned above, the court hopes to issue the second summary judgment opinion shortly. In the meantime, the parties are directed to alert the court promptly of any developments in the IPR proceedings or in the Seventh Circuit appeal of *ABS I*. The court will reschedule the trial as soon as practical following guidance from PTAB and the Seventh Circuit.

UNDISPUTED FACTS¹

A. Overview of the Parties

Plaintiffs Inguran, LLC d/b/a STGenetics (“ST”), XY, LLC and Cytonome/ST, LLC. Plaintiff XY is a wholly-owned subsidiary of plaintiff ST. Defendants ABS Global, Inc., Genus plc and Premium Genetics (UK) Ltd. Both Premium Genetics and ABS are wholly-owned subsidiaries of Genus. The parties are competitors in the business of providing sexed bull semen.

B. *ABS I* Litigation

In a prior lawsuit, *ABS Global, Inc. v. Inguran, LLC*, No. 14-cv-503 (W.D. Wis. July 14, 2014), ABS asserted antitrust claims against ST, and ST asserted counterclaims against ABS and Genus for breach of contract and patent infringement. XY also intervened in that

¹ Across both motions, the parties submitted over 2,000 proposed findings of facts. The court has included the key facts in this section and incorporates other, material facts, in the opinion section below. Unless otherwise noted, these facts are undisputed.

lawsuit and asserted claims against ABS and Genus for trade secret misappropriation and patent infringement, though the two asserted patents by XY were found unpatentable in an *inter partes* review proceeding.

Following extensive discovery and motion practice, a jury found in favor of ABS on its antitrust claim, and the court entered an injunction to be in force for five years. The jury also found ABS liable for trade secret misappropriation and awarded XY \$750,000 in damages. Finally, the jury found ABS had infringed ST's patents and awarded ST a lump sum and running royalties on those two patents. In a recent decision, the Seventh Circuit Court of Appeals affirmed in part and reversed in part this court's decision on a motion for judgment notwithstanding the verdict, remanding for further proceedings on patent claims alone, while affirming in all other respects. *See ABS Glob., Inc. v. Inguran, LLC*, No. 17-1873, 2019 WL 350647 (7th Cir. Jan. 29, 2019).

C. XY Patents-In-Suit

Two of the six patents-in-suit are owned by XY. Generally, U.S. Patent Nos. 6,524,860 ("the '860 patent") and 9,365,822 ("the '822 patent") are both directed at methods for sorting cells using improved fluid media. ('860 patent (dkt. #1-7); '822 patent (dkt. #1-6).) The '860 patent issued on February 25, 2003, and the '822 patent issued on June 14, 2016. Neither patent, however, remains in force, both having expired December 31, 2017, approximately six months after plaintiffs filed the present lawsuit.

1. '860 Patent

ST and XY assert infringement of claims 1-7, 17-19, 21-22, 28, 30-32 and 38-44.

The only independent claims are 1 and 32. For purposes of claim construction, the parties dispute three terms: (1) “chemically coordinating” in claims 1 and 32; (2) “minimizing the chemical changes” in claims 2 and 21; and (3) “hyper-responsive” in claims 22, 31 and 38.

The ’860 patent concerns three “fluid environments”: (1) a “pre-sort” fluid environment; (2) a sheath fluid environment, which cells are exposed to during the sorting process; and (3) a “post-sort” fluid environment. The patent states that “the invention is remarkable [from earlier sex-selected sperm sorting strategies] in that it removes the total focus from that of operation of the flow cytometer to a focus on handling and removing stress from the [sperm] cells themselves.” (Pls.’ Add’l PFOFs ¶ 2 (dkt. #197) (quoting ’860 patent at 7:47-50).) The patent goes on to state that “by selecting the appropriate sheath fluid not only in context of flow cytometry parameters, but rather also in context of the cell parameters themselves, the changes experienced by the cells and the over all [*sic*] result of the sorting can be enhanced.” (*Id.* at ¶ 3 (quoting ’860 patent at 8:7-11).)

Consistent with these statements, plaintiffs maintain the sheath fluid environment was selected in the prior art based on parameters that affect the mechanical operation of the cell sorter, whereas the patent shifted the focus to selecting fluid environments based on how they affected the health of the cells. Independent claim 1 provides:

1. A method of sorting cells by flow cytometry comprising the steps of:
 - a. establishing a cell source which supplies cells to be sorted;
 - b. *chemically coordinating* a sheath fluid to create a sheath fluid environment for said cells which is coordinated with both a pre-sort and a post-sort cell fluid environment and combining such cells in a flow cytometer;
 - c. sensing a property of said cells in a flow cytometer;
 - d. discriminating between cells having a desired characteristic; and

e. collecting cells having said desired characteristic.

('860 patent at 18:42-54 (emphasis added).) Independent claim 32 provides:

32. A method of sorting cells by flow cytometry comprising the steps of:

- a. establishing a cell source which supplies cells to be sorted;
- b. establishing a sheath fluid to create a sheath fluid environment for said cells and combining said sheath fluid with said cells;
- c. sensing a property of said cells in a flow cytometer;
- d. discriminating between cells having a desired characteristic;
- e. collecting cells having the desired characteristic in a collector fluid; and
- f. *chemically coordinating* said collector fluid with said sheath fluid to create an ending collector fluid environment for said cells which is coordinated with a pre-sort fluid environment.

('860 patent at 21:4-20 (emphasis added).)

Dependent claim 2 describes a method dependent on claim 1, in which there is a further step “of *minimizing the chemical changes* said cells are subjected to as a result of being subjected to said sheath fluid.” ('860 patent at 18:55-58.) Similarly, claim 21 is dependent on claim 2, but further describes that in

minimizing the chemical changes said cells are subjected to as a result of being subjected to said sheath fluid comprises provided said pre-sort and post-sort cell fluid environments which contain at least one *hyper-responsive* chemical composition to which said cells are particularly responsive and wherein said step of chemically coordinating a sheath fluid minimizes changes to said *hyper-responsive* chemical composition.

('860 patent at 20:8-16.) Claim 31 also describes a method dependent on claim 1 which comprises “establishing a source of cells which are *hyper-responsive* to a chemical composition in a sheath fluid environment.” ('860 patent at 20:66-21:3.) Similarly, claim

38, dependent on claim 32, also describes a method for “establishing a cell source which supplies cells which are *hyper-responsive* to a chemical composition in a surrounding fluid environment.” (’860 patent at 22:7-10.)

2. ’822 Patent

The ’822 patent states that “the present invention provides improved sheath and collector systems for sorting of sperm cells to determine their sex through a flow cytometer.” (Pls.’ Add’l PFOFs (dkt. #197) ¶ 81 (citing ’822 patent at 3:32-34).) The patent further states that “[a] parallel goal is to provide substances and techniques which are especially suited for sperm cells in general, for bovine sperm cells, for equine sperm cells, and for the separation of such sperm cells into X- and Y- chromosome bearing components.” (*Id.* at ¶ 82 (citing ’822 patent at 4:52-56).) However, the specification does not limit the scope of the invention to these one or two species.

Here, ST and XY assert infringement of claim 11 of the ’822 patent, which provides:

11. A method of producing at least one sexed embryo comprising:
 - producing a stream containing sperm cells, wherein the stream comprises sperm cells from a cell source surrounded by sheath fluid, wherein the sheath fluid surrounding the sperm cells includes a citric acid;
 - identifying X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in the stream;
 - collecting X-chromosome bearing sperm cells and/or Y-chromosome bearing sperm cells in at least one collector having a collector fluid which includes a citric acid; and
 - fertilizing at least one egg with the collected sperm cells to form at least one sexed embryo.

(’822 patent at 30:21-35.)

D. Facts Relevant to Plaintiffs' Trade Secrets and Breach of Contract Claims

In addition to the patent claims, plaintiff XY asserts misappropriation of trade secrets claims against all three defendants. XY alleges that Premium Genetics misappropriated XY's trade secrets by publishing some of XY's fluid media protocols in U.S. Patent Application No. 14/308,399 ("the '499 application"). This application was published on April 30, 2015. XY asserted claims under both the federal Defend Trade Secrets Act, 18 U.S.C. § 1836, *et seq.*, as well as state law.²

In *ABS I*, XY asserted a similar trade secrets misappropriation claim based on the "disclosure and use of XY's confidential trade secret information," in its First Amended Answer and Counterclaim, which was filed seven months *after* the publication of the '499 application.³ Specifically, XY alleged that "[t]he trade secrets at issue were 'XY's protocols for the sexing and freezing of . . . sperm' obtained 'through targeted hiring of former XY employees.'" (Defs.' PFOFs (dkt. #161) ¶ 1066 (quoting Mulder Decl., Ex. 23 (XY, LLC's 1st Am. Answ. & Countercls.) (dkt. #159-23) ¶ 221).)

In the present case, plaintiff ST also alleges a breach of contract claim against defendant ABS based on the same alleged disclosure: "ABS causing the fluid media protocols to be published in the '499 Application and thereby breach[ing] the

² In its order on defendants' motion to dismiss, the court previously concluded that XY's "claim under the Defend Trade Secrets Act fails as a matter of law because the Act does not apply retroactively to [Kathy] Mean's misappropriation that took place before its enactment." (9/28/19 Op. & Order (dkt. #172) 12.) Accordingly, the court will not address that part of defendants' summary judgment motion further.

³ The '499 application itself was also on ABS's trial exhibit list in *ABS I*, although the court sustained ST's objection to its introduction and excluded that application from evidence. (Defs.' PFOFs (dkt. #161) ¶ 1074 (citing Mulder Decl., Ex. 29 (ABS's Ex. List) (dkt. #159-29) 40).)

confidentiality provisions of a [2012 semen sorting] contract between ST and ABS.” (Pls.’ Resp. to Defs.’ PFOFs (dkt. #196) ¶ 68.) Similarly, “[i]n *ABS I*, ST alleged that ABS breached the parties’ 2012 Agreement by ‘improperly disclos[ing] and/or us[ing] Inguran’s confidential information and trade secrets in its laser-based sex-sorting technologies and other sex-sorting technologies.” (*Id.* at ¶ 1057 (quoting Mulder Decl., Ex. 19 (Inguran’s 2d Am. Answ. in *ABS I*) (dkt. #159-19) ¶ 223).) The ‘499 Application was published nine months before ST filed this operative pleading in *ABS I*.

The jury instructions in *ABS I* provided that “[t]o prove breach of contract, ST must prove by a preponderance of the evidence that during the time the parties were operating under the terms of the 2012 Agreement, ABS or Genus failed to comply with the confidentiality provision in Section 16 of that contract by using or disclosing ST’s (a) media protocols or (b) quality control data.” (*Id.* at ¶ 1061 (quoting Mulder Decl., Ex. 21 (*ABS I* Closing Instr.) (dkt. #159-21) 29).)

Following a favorable liability verdict and damage award by the jury in *ABS I*, judgment was entered on April 24, 2017, in XY’s favor on its trade secrets claim and in ST’s favor on its breach of contract claim. Among other things, that portion of the judgment was affirmed by the Seventh Circuit in an opinion and order dated January 29, 2019.

OPINION

I. Patent Claims

A. '860 Patent

The Federal Circuit recognizes as “a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). As a matter of law, the court solely determines claim construction, *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996), with the words of the claims always being the “appropriate starting point.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998).

The question for the court is “how a person of ordinary skill in the art understands a claim term” as an “objective baseline from which to begin claim interpretation,” *Phillips*, 415 F.3d at 1313. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* In fact, “[t]he best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history.” *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998). As the Federal Circuit has recognized, however, “there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 (Fed. Cir. 2004) (quoting *Comark Commc’ns*,

156 F.3d at 1186-87). “[A]n inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment. The problem is to interpret claims ‘in view of the specification’ without unnecessarily importing limitations from the specification into the claims.” *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

In addition to intrinsic evidence like the specification and prosecution history, courts *may* consider “extrinsic evidence, which ‘consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.’” *Phillips*, 415 F.3d at 1317 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995)). “However, while extrinsic evidence ‘can shed useful light on the relevant art,’ [the Federal Circuit has] explained that it is ‘less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Id.* (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)). Accordingly, any extrinsic evidence must be considered in the context of the intrinsic evidence, keeping in mind the flaws inherent in each type of extrinsic evidence in construing patent claims. *Id.* at 1318.

Here, the parties dispute the meaning of the term “chemically coordinated” in claims 1 and 32 of the ’860 patent. Defendants maintain that the term is indefinite, while plaintiffs contend that the term means “selecting chemical compositions that lessen the stress placed on cells in pre-sort, sorting, and post-sorting fluid environments.” (Pls.’ Opp’n (dkt. #191) 9.)

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). “‘Reasonable certainty’ does not require absolute or mathematical precision.” *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017). Just as is claim construction more generally, whether a claim is indefinite is a question of law for the court. *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 516 (Fed. Cir. 2012). Moreover, like other invalidity challenges, a party raising an indefiniteness challenge bears the burden of proving that invalidity by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 97 (2011); *see also* 35 U.S.C. § 282.

While acknowledging that it is not dispositive on the issue of indefiniteness, defendants would stress the deposition testimony of the lead inventor of the ’860 patent, Dr. Seidel, who stated that the term “doesn’t have a precise, defined meaning,” that he “do[es]n’t know what ‘chemically coordinated’ means,” and acknowledged that it has “no reasonable boundaries.” (Defs.’ Opening Br. (dkt. #162) 30 (quoting Seidel Dep. (dkt. #146) 100, 106, 124).) In response, plaintiffs discount the weight of Seidel’s testimony by pointing out that: he is not a named expert; he was subpoenaed as a third-party for his deposition; he acknowledged at his deposition that he had only “trivially” looked at the patent before the deposition; and he did not read the entire patent or review the prosecution history in responding to questions about the meaning of “chemically coordinated.” (Pls.’ Add’l PFOFs (dkt. #197) ¶¶ 51, 54-56, 59-60.) Still, there is no dispute that Seidel is a person skilled in the art, with personal knowledge of the patent in

issue as a lead inventor, and was unable to testify to the meaning of that term.

Putting aside the weight, if any, to be placed on Dr. Seidel's deposition testimony, defendants also argue that the specification does not define this term; rather, it simply describes lessening stress as a *goal* of the invention. Specifically, defendants direct the court to the following passage and figure:

For the sheath fluid, a substance is selected according to one embodiment of the invention so that it may be chemically coordinated to prevent minimal changes. Thus, by selecting the appropriate sheath fluid not only in the context of flow cytometry parameters, but rather also in the context of the cell parameters themselves, the changes experienced by the cells and the over all result of the sorting can be enhanced. This is shown conceptually in FIG. 3. FIG. 3 shows some type of chemical factor (such as citrate or other factors) as it may exist throughout the various phases of the process. For instance, the four phases shown might represent the following: phase I may represent the existence of cells within the cell source (1), phase II might show the existence of the cells as they are sorted in the sheath fluid environment, phase III might show the cells as they are collected after sorting and phase IV might show the reconstituted cells in a storage medium after sorting. These four phases as shown for the prior art may experience vastly different chemical factor environments. As shown conceptually, however, in the present invention the cells may experience very little change, most notably the dip or drop experienced between phases I and II may be virtually absent. This is as a result of the selection of the appropriate sheath fluid mentioned above. Thus, as a result of being subject to an appropriate sheath fluid, the cells in the present invention may experience a much lower level of stress.

('860 patent at 8:5-30.)

As referenced in the attached description, Figure 3 purports to show the "chemical factor" overtime of the invention as compared to the prior art:

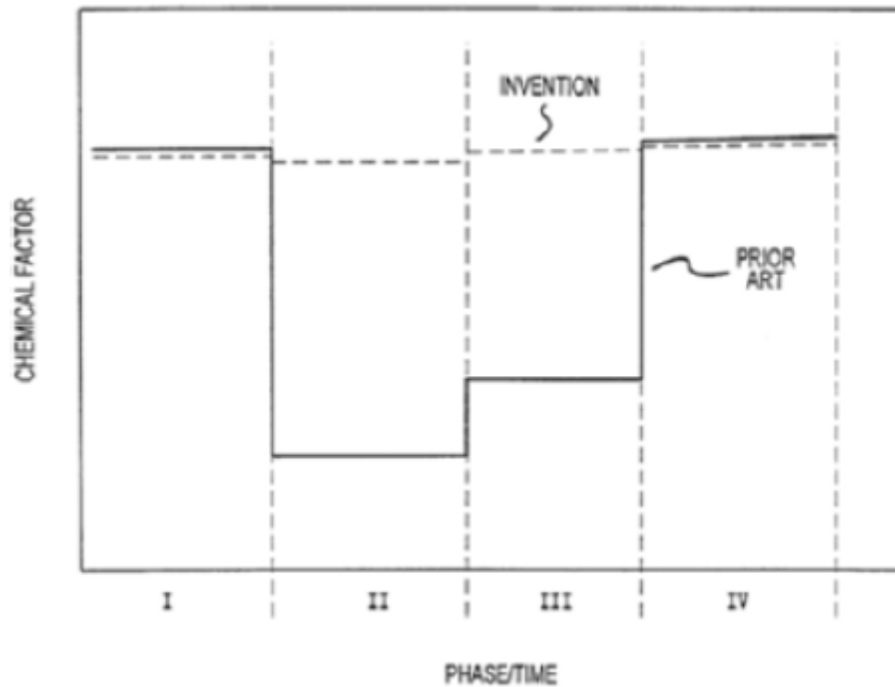


FIG.3

Defendants assert that Figure 3 is simply conceptual, something plaintiffs' expert acknowledged at his deposition. (*See* Defs.' PFOFs (dkt. #161) ¶ 86 (citing Nolan Dep. (dkt. #155) 80-81).) Regardless, the court agrees that Figure 3 provides no additional information to one skilled in the art as to the meaning of "chemically coordinated" than to illustrate that the goal of the invention is to create a stable chemical environment for the cells. Specifically, neither the Figure nor the above passage in the specification describing it explain what "chemical factor" is measured on the y-axis or how one controls the chemical factor to meet the "chemically coordinated" limitation. Plaintiffs' own explanation of Figure 3 is similarly lacking; offering nothing more than that the "dashed line" depicts what the "invention of the '860 patent seeks to limit . . . stress," and noting that the invention is "not about the specific chemical used in each of the fluid

environments, but rather in making sure that the chemical compositions across multiple fluid environments are coordinated.” (Pls.’ Opp’n (dkt. #191) 11.)

Defendants also point out that the USPTO initially rejected independent claims 1 and 32 of the ‘860 patent, finding the term “chemically coordinated” to be indefinite. As the claim examiner explained: “it is unclear how the sheath fluid is ‘chemically coordinated to create a sheath fluid environment which is coordinated with both a pre-sort and a post-sort cell fluid environment.’” (Defs.’ Opening Br. (dkt. #162) 35 (citing Mulder Decl., Ex. 41 (dkt. #160-15) 4).) In response, the applicants argued that “the recitation is clearly defined by the description along with various examples of the sheath fluid environments coordinated with both a pre-sort and a post-sort cell fluid environment,” and directed the USPTO to Figure 3. (*Id.* at 36.) While the USPTO ultimately dropped this basis for the rejection at the time of the ‘860 patent prosecution, defendants point out that the patent examiner did not benefit from the current standard of definiteness as articulated by the United State Supreme Court in *Nautilus*, which post-dates that prosecution.

As for plaintiffs’ possible reliance on the examples in the ‘860 patent -- 2.9% sodium citrate sheath fluid in sorting bovine sperms cells and HEPES sheath fluid for use in sorting equine sperm cells -- defendants argue that they, too, provide “no guidance to a skilled person as to how to assess ‘chemical coordination’ between the sheath fluid and the pre-sort and/or post-sort fluids.” (*Id.* at 36-37.) In any event, perhaps in part because such an argument would undermine their infringement claim, since it appears that ABS does not use chemicals described in the examples, plaintiffs do not ultimately rely on these examples

to define the term “chemically coordinated.” (Pls.’ Add’l PFOFs (dkt. #197) ¶¶ 34-35.)⁴

Ultimately, defendants contend that the lack of any benchmarks or standard for one skilled in the art to know when the sheath fluids are “chemically coordinated” demonstrates that term is indefinite, and direct the court to Federal Circuit opinion as support. For example, in *Dow Chemical Company v. Nova Chemicals Corporation (Canada)*, 803 F.3d 620, 633 (Fed. Cir. 2015), the Federal Circuit considered whether the term “slope of strain hardening coefficient” was indefinite given the lack of information on how to measure the slope. Before *Nautilus*, the court noted specifically that any method of measurement developed by a person skilled in the art would have satisfied the definiteness requirement. *Id.* at 634. After *Nautilus*, however, the Federal Circuit held that § 112, ¶ 2 “require[s] that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Id.* (quoting *Nautilus*, 134 S. Ct. at 2129). As a result, the *Dow* court concluded that the term was indefinite absent “required guidance” as to the method for measuring the slope. *Id.* Similarly, in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1344-45 (Fed. Cir. 2015), the Federal Circuit reversed the district court, finding the term “molecular weight” was indefinite where the patent failed to inform with “reasonable certainty” the method for measuring molecular weight, recognizing three possible methods

⁴ Defendants further point to extrinsic evidence (or more precisely, its absence) to argue that this term is indefinite, including the testimony of plaintiffs’ expert, Dr. Nolan, that the chemical factors to be coordinated are any that impact the function of the cells and their stress, with those factors determined by the “intended purpose” of the person skilled in the art and the amount of improvement sought. (Defs.’ PFOFs (dkt. #161) ¶¶ 105-07 (citing Nolan Depo. (dkt. #155) 71-72, 103, 219-220).)

for doing so.⁵

In response, plaintiffs principally argue that: the claims do not require “numerical quantification/comparison”; it would be improper to read such a requirement into the claims; and “a person of skill in the art can determine whether fluid environments are chemically coordinated without any kind of stress measurement whatsoever.” (Pls.’ Opp’n (dkt. #191) 14.) In support, however, plaintiffs simply point to their expert’s analysis of the alleged infringing technology in this case, rather than to any intrinsic or extrinsic evidence that one skilled in the art might consult to know the meaning of the term with reasonable certainty.

As a result, plaintiffs’ construction of the term “chemically coordinated” is defined solely by the patent’s own reference to the goal of lessening stress on cells, leaving even one skilled in the art to decide not only when that goal is reached, but also how to measure it (*e.g.*, by consistent chemical makeup of the sheath fluid among phases, by coordinated adjustments to the chemical makeup in each phase, by cell stress measurements in each phase, or by a stable population of viable cells across all phases). While a “you’ll know it when you see it approach” may work in other areas of law, this approach is incompatible with the requirement that a patent claim informs “with reasonable certainty” those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901.

⁵ Defendants also cite to *Honeywell Int’l, Inc. v. Int’l Trade Comm’n*, 341 F.3d 1332 (Fed. Cir. 2003), a case pre-dating *Nautilus*, and therefore subject to a less demanding indefiniteness standard. In *Honeywell*, the Federal Circuit concluded that the term “melting point elevation” was “insolubly ambiguous, and hence indefinite,” because of the lack of information about how to measure the melting point. *Id.* at 1339-40.

Since the indefiniteness inherent in the term “chemically coordinated” is found in both independent claims of the ‘860 patent, the dependent claims are doomed as well. *See Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (“Since claim 1 is the ‘137 patent’s sole independent claim, the court’s grant of summary judgment of indefiniteness as to claim 1 invalidated each claim in the ‘137 patent.”), *abrogated by Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014); *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1246 & 1250 n.2 (Fed. Cir. 2008) (affirming district court’s finding that independent claim and dependent claims were invalid as indefinite; finding plaintiff had waived any challenge to district court’s conclusion that the dependent claims stood or fell with independent claim).⁶ As such, the court will grant defendants’ motion for summary judgment as to the ‘860 patent, finding that the patent is invalid as indefinite.⁷

⁶ Even if that were not so, the term “minimizing the chemical changes” found in dependent claims 2 and 21 is also indefinite: as with the term “chemically coordinated,” plaintiffs’ proposed construction turns on the goal of the invention. Specifically, plaintiffs argue that the term “simply requires ‘lessening the chemical stresses, such as chemical factor changes, imposed on cells,’” and that one skilled in the art “would know if the chemical stresses were lessened if ‘it improved the outcome of the cells’ in relation to chemical formulations that do not infringe the claim.” (Pls.’ Opp’n (dkt. #191) 19 (citing Nolan Rebuttal Rept. (dkt. #135) ¶ 124; Nolan Dep. (dkt. #155) 100-01.) While the term “hyper-responsive” found in other of the dependent claims appears to be a closer call -- especially in light of the language in the specification defining “hyper-responsive chemicals as those chemicals to which the cells at issue[] ‘are particularly responsive in the context of their functionality and the then-existing handling techniques’” (Pls.’ Opp’n (dkt. #191) 20 (quoting ‘860 patent at 7:60-63)) -- the court need not construe this term in light of its finding that the invalidity of the independent claims dooms the dependent claims.

⁷ The court, therefore, need not reach defendants’ alternative arguments that plaintiffs’ ‘860 patent claims are barred by claim preclusion or that any damages are duplicative of those awarded in *ABS I* for breach of contract and trade secret misappropriation.

B. '822 Patent

The parties do not request any claims construction for this patent. Instead, defendants' sole invalidity challenge is premised on a lack of a written description. Under 35 U.S.C. § 112, the written description "must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*) (citation and quotation marks omitted). In particular, the disclosure must demonstrate that "the inventor had possession of the claimed subject matter *as of the filing date*." *Id.* (emphasis added). The determination of whether this requirement is met involves "an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art." *Id.*

The '822 patent is directed toward the field of "sex selection of mammalian offspring." ('822 patent at 1:16-17.) The allegedly infringed claim, Claim 11, discloses a method of producing at least one sexed embryo, without any limitation to a particular species. Claim 11 was first presented during the prosecution of the '822 patent on October 30, 2013, in response to a non-final office action dated August 15, 2013. Indeed, the claim was added 16 years after filing of the original application.

At the time of filing of that application, defendants contend that the inventors were only in possession of a method for using citric acid to sort bovine sperm. In support, defendants direct the court to a portion of the specification, which acknowledges that "[a]t present, studies have been primarily achieved on bovine species, however, it is not believed that these techniques will be limited to such species, or for that matter to only sperm cells." ('822 patent at 3:42-45.) Another part of the specification further acknowledges that the

citric acid media formula “does not perform as well” for equine sperm cells; instead, the specification provides that for equine species a “hepes buffered medium . . . works well.” (*Id.* at 9:6-33.)

Curiously, given the specification disclosing apparent limitations in its use as to the only other species tested (equine), plaintiffs originally argued that the “novelty of invention was the inclusion of *citric acid* in both the sheath fluid and the post-sort ‘collector’ fluid,” not the application of the invention to bovine sperm specifically. (Pl.’s Opp’n (dkt. #191) 24 (emphasis added).) In fairness, plaintiffs also point to portions of the specification discussing the invention broadly in terms of sperm cells or animals, without any limitation to a particular species. *See* ’822 patent at 4:32-34 (“Accordingly the present invention provides improved sheath and collector systems for sorting of *sperm cells* to determine their sex through a flow cytometer.” (emphasis added)); *id.* at 4:52-56 (“A parallel goal is to provide substances and techniques which are especially suited for *sperm cells in general*, for bovine sperm cells, for equine sperm cells, and for the separation of such sperm cells into X- and Y-chromosome bearing components.” (emphasis added)); *id.* at 14:36-39 (“As a result of the insemination, it is of course desired that *an animal* of the desired sex be produced. This *animal* may be produced according to the systems discussed earlier through the use of the sexed sperm specimen.” (emphasis added)).

Plaintiffs argue that all of these references in the specification are analogous to those at issue in *Honeywell International, Inc. v. United States*, 609 F.3d 1292 (Fed. Cir. 2010). In that case, the Federal Circuit reversed a lower court’s ruling that a patent claim failed to meet the written description requirement. The claim at issue concerned “a display system”

without a particular selection of color filters. *Id.* at 1297. The examples in the specification were limited to a particular kind of display system called a monochromatic CRT. However, the specification stated that “it is understood that the present invention can be applied to a wide variety of display and vision aid devices.” *Id.* Based on this non-limiting language, the Federal Circuit concluded that the broader “display system” language in the claim satisfied the written description requirement.

The specification language in *Honeywell* is actually readily distinguishable from that here. In that case, the specification did *not* cast doubt on a broader application of the claimed invention. Most critically, here, claim 11 claims the use of *citric acid* in both the sheath fluid and the collector fluid for the successful creation of a sexed embryo, while at the same time teaching away from the use of citric acid for other species, noting that this chemical is less useful for sorting equine sperm and may not work at all with the semen of other animals. As such, the specification of the '822 patent has the same shortcomings as those identified by the Federal Circuit in the *Ariad* case, which addressed a claim purporting to cover a “broad genus.” The *Ariad* court held that this alone was not enough: “a sufficient description of a genus instead requires the disclosure of either a representative number of species falling within the scope of the genus or structural features common to the members of the genus so that one of skill in the art can visualize or recognize the members of the genus.” *Ariad Pharm.*, 598 F.3d at 1350 (discussing *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559 (Fed. Cir. 1997)) (quotation marks omitted). Since the '822 patent discloses neither, the court finds that claim 11 fails to meet the written description requirement of § 112. Accordingly, defendants’ motion for summary judgment as to the

invalidity of the '822 patent will also be granted.⁸

II. State Law Claims

Defendants also seek summary judgment on plaintiffs' respective state law claims on the basis of claim preclusion. Specifically, based on the same alleged, unauthorized disclosure of the XY protocols in the '499 patent application, plaintiff ST asserts a breach of contract claim and plaintiff XY asserts a trade secrets claim. As the court explained in its prior opinion and order on defendants' motion to dismiss, both the breach of contract claim and the trade secrets misappropriation claim were "predicated upon facts that were the proper subject of the litigation in *ABS I* under the transactional test." (9/28/18 Op. & Order (dkt. #172) 7, 12.) Nevertheless, the court declined to dismiss these claims on the pleadings, finding that the concealment exception to the claim preclusion doctrine may apply.

As the court recognized in its prior opinion and order, neither the Wisconsin Supreme Court nor the Seventh Circuit has expressly adopted the concealment exception. So the first issue to be resolved on summary judgment is a legal one: whether a concealment exception to claim preclusion as set forth in the Restatement (Second) of Judgments is available to plaintiffs under Wisconsin law. The Restatement provides, a "defendant cannot justly object to being sued on a part or phase of a claim that the plaintiff failed to include in an earlier action because of the defendant's own fraud." Restatement (Second) of Judgments § 26, cmt. j (1982). Consistent with that plain language, other

⁸ Because of this finding, the court need not reach defendants' double recovery argument also made with respect to the '860 patent.

courts applying Wisconsin law have recognized a similar exception. *See, e.g., Hammes v. First Nat'l Bank & Tr. Co. of Racine*, 79 Wis. 2d 355, 363, 255 N.W.2d 555, 559 (Wis. 1977) (“[T]he res judicata effect of a county court order is dependent upon competent jurisdiction and an *absence of fraud*.” (emphasis added)); *Bell v. City of Milwaukee*, 514 F. Supp. 1363, 1368 (E.D. Wis. 1981) (“[A] state court judgment has no binding effect in subsequent litigation where the plaintiff proposes to rely on evidence that he was unable or failed to present in the first action on account of the defendant’s fraud or concealment.”). Accordingly, the court applies the same standard here, leaving a factual question: whether a reasonable jury could find defendants engaged in fraud or an intentional misrepresentation to prevent plaintiffs’ discovery of the disclosure of confidential information or trade secrets in the ‘499 patent application.

At the summary judgment hearing, the court pressed plaintiffs’ counsel for their evidence of fraud. In response, plaintiffs emphasized two pieces of evidence.⁹ First, plaintiffs pointed to the deposition testimony of ABS’s production director for the GSS Lab, Jeff Betthauser, that “ABS treats sorting protocols as trade secrets and confidential information and would not let them out of the company.” (2/8/19 Hrg. Tr. (dkt. #245) 134; *see also* Betthauser Dep. (ABS I dkt. #462) 28, 122.) However, this blanket, general statement is too broad to constitute a misrepresentation as to the disclosure of sorting

⁹ Plaintiffs also cited extensively in their proposed findings of facts to defendants’ trial testimony and arguments in *ABS I*, representing that it addressed the misappropriation by creating new protocols. (*See, e.g.,* Pls.’ Add’l PFOFs (dkt. #197) ¶¶ 504, 507.) As defendants pointed out at the hearing, since these statements were made after the close of discovery, their relevance as proof of concealment is questionable. Regardless, statements made that ABS created new protocols proved true and did not constitute a misrepresentation about the disclosure of the ST protocols in the ‘499 application.

protocols in a patent application specifically. If anything, the disclosure of trade secrets and confidential information in a patent application is exactly what a reasonable person would expect a company to do in an effort to protect it. Regardless, plaintiffs could not reasonably rely on a general statement about keeping sorting protocols confidential to preclude a necessary disclosure in an application to secure patent rights.

Second, plaintiffs pointed to the testimony of Genus's CEO, Karim Bitar, during his deposition in *ABS I* to the effect that "ABS had investigated . . . and concluded that there was 'one bad apple.'" (2/8/19 Hrg. Tr. (dkt. #245) 134; *see also* Bitar Dep. (*ABS I* dkt. #455) 28.) This statement could reasonably be construed as limiting the misappropriation to Mean, not as a statement limiting the reach of the disclosure. Moreover, as described next, it appears that Mean *was* the individual who passed along the protocols for inclusion in the '499 application, entirely consistent with Bitar's testimony that there was only one bad apple.

Even if any of defendants' statements during discovery (or even at trial) could support finding an intentional misrepresentation upon which plaintiffs reasonably relied to discourage further discovery as to defendants' use of the purloined protocol, plaintiffs have a larger problem as to its materiality. As defendants noted at summary judgment, both the '499 application and the disclosure of the misappropriated protocols in that application *were* disclosed to plaintiffs during discovery in *ABS I*. First, there is no dispute that during discovery in *ABS I*, ABS produced an email from Kathy Means to Betthauser forwarding the protocols *for a patent application*, and that plaintiffs explored this email at Betthauser's deposition. (Betthauser Dep. (*ABS I* dkt. #462) 99-100 (discussing June 12,

2014, email from Mean to Betthauser and others, stating that Mean “modified the medial protocols to reflect that they are ABS protocols . . . probably better to use these due to the information not provided on them”).) Second, ABS included the ’499 patent application itself on its exhibit list, and plaintiffs here objected to its admission. While the exhibit was not admitted at trial, its production and plaintiffs’ awareness of the application is not reasonably in dispute, nor were plaintiffs prevented from introducing it as further evidence of loss in the damages phase, particularly since plaintiffs now represent that the application reflected a direct rip-off of its confidential protocols right down to grammatical and typographical errors. Instead, plaintiffs moved to exclude its use.

All of this said, the court is sympathetic to plaintiffs’ position in this lawsuit. Plaintiffs decision not to explore further the disclosure to XY’s protocols in the ’499 application is understandable, particularly given all of the issues involved and defendants repeated assurance of their efforts to minimize disclosure. On the other hand, the record does not support a finding that defendants committed actual fraud or other intentional misrepresentation to conceal its disclosure through filing of the ’499 patent application.¹⁰ As such, the court will grant defendants’ motion for summary judgment as to the breach of contract and trade secrets misappropriation claim, finding both barred by the judgment

¹⁰ Defendants also noted another hurdle to plaintiffs’ claims arising out of that disclosure: a lack of quantifiable damages. Following the summary judgment hearing, both sides were allowed to brief this issue, including whether plaintiff met their disclosure obligations under Rule 26. While the court is troubled by late, amorphous disclosure of monetary damages based on the loss of an upfront, lump-sum royalty payment “in the range of \$1,000,000-\$2,000,000,” particularly after their president and 30(b)(6) designee had already seemed to disavow any ability to quantify the loss of this disclosure, the court need not decide that issue since the trade secrets and breach of contract claim will not go forward regardless.

in *ABS I*.

ORDER

IT IS ORDERED that:

- 1) Defendants ABS Global, Inc., Genus PLC and Premium Genetics (UK) Ltd.'s partial motion for summary judgment (dkt. #156) is GRANTED IN PART and RESERVED IN PART. The motion is GRANTED as to defendants' counterclaims that (a) all asserted claims of the '860 patent are invalid as indefinite and (b) claim 11 of the '822 patent is invalid for lack of written description. This finding also disposes of plaintiffs Inguran, LLC d/b/a STGenetics, XY, LLC and Cytonome/ST, LLC's claims of infringement of those same patents. The motion is also GRANTED as to plaintiffs' trade secret misappropriation and breach of contract claims, finding both precluded by the *ABS I* judgment. In all other respects, the motion is RESERVED.
- 2) Plaintiffs' unopposed motion to supplement the rebuttal expert report of Dr. John Nolan (dkt. #221) is GRANTED.
- 3) Defendants' unopposed motion to supplement the expert report of Dr. Charles Ostermeier (dkt. #230) is GRANTED.

Entered this 26th day of February, 2019.

BY THE COURT:

/s/

WILLIAM M. CONLEY
District Judge